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February 25, 2010

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RE: **Comments on Orange County Stormwater Program NPDES Land Development Technical Advisory Group (TAG) – February 9, 2010 Meeting**

Dear Mr. Boon and Ms. Weiland,

The Natural Resources Defense Council ("NRDC") and Orange County Coastkeeper ("Coastkeeper") appreciate the opportunity to comment on the materials and issues discussed or identified at the February 9th NPDES Land Development TAG meeting for Orange County. NRDC and Coastkeeper believe that the time allotted for comment and response by the TAG, two weeks with one week given for responses to specific questions, is not adequate to fully address the critical issues presented for implementation of the Orange County MS4 permits. However, with this consideration in mind, we hope that the TAG will take our comments into consideration in working to develop feasibility and implementation criteria that serve to improve the quality of and protect Orange County Waters.

The TAG Must Establish Criteria That Properly Implement Permit Requirements

NRDC and Coastkeeper are concerned by the approach taken by the TAG toward creation of feasibility criteria for use of LID practices to meet the onsite retention requirements of the Orange County MS4 Permits, and for implementation of those permits' requirements overall. Rather than taking the approach, as established by the permits, that LID is to be treated as feasible unless demonstrated otherwise, and developing thoughtful criteria to allow for site specific analysis and alternate runoff mitigation practices for conditions of infeasibility as the permits require, the TAG appears increasingly to have flipped this mandate on its head. Effectively, the TAG appears to be taking the approach that it must be affirmatively demonstrated that LID is feasible at a site in order for the terms of the permit to be enforceable. This approach reflects comments by some members of the TAG during the permit adoption process, comments which were rejected in the final Permit

Collectively, the various proposed criteria or proposed methods for developing criteria represent an attempt, inadvertent or not, to supplant the clearly stated requirements and mandatory emphasis on LID established by the two permits with, in effect, a "business as usual" approach to stormwater management. We urge the TAG to rethink its approach to development of criteria such that the criteria ultimately established are in-line with the requirements of the Orange County MS4 permits. We cite the following issues as examples of proposals or approaches currently presented to the TAG that diverge from permit requirements:

- Soil Amendments Must be Considered for Areas With Low Infiltration Rates: The TAG proposals related to infiltration have so far largely ignored the use of soil amendments as a means of increasing infiltration or evaporation potential of low-infiltration soils. Use of amended soils (e.g., employing organic compost material) should be a required practice to maximize water storage and subsequent infiltration or evapotranspiration where their use is both feasible and necessary to meet onsite retention requirements.

- Site Specific Soils Screening: The TAG has noted that criteria for infiltration are to be "based on site-level testing,"[1] but then states that "if in D soils area . . . no on-site soil testing required." (Feb. 9 TAG Presentation, at p. 19.) Feasibility criteria must make clear that all determinations of infeasibility of infiltration based on soil type or infiltration rate are to be based on site-level testing and assessment.

- Use of Subsurface Infiltration is not Optional Where Both Feasible and Necessary to Meet Onsite Retention Requirements: The TAG has recommended that use of subsurface BMPs be considered optional and used only "where the owner accepts risk and commits to maintenance." (Feb. 9 TAG Presentation, at 19.) However, the mere imposition of maintenance requirements or operations and maintenance costs does not render practices that are otherwise feasible for onsite retention as "optional" under the permit mandates. Maintenance is a required component of many BMPs, both conventional and LID based, and is required for any BMP where necessary to ensure the proper continued operation of the BMP. As with all LID BMPs, use of subsurface infiltration may be considered "optional" where other practices are available and will, alone or in combination, result in onsite retention of the design storm volume. However, use of subsurface infiltration may be necessary, and therefore, mandatory, for achieving compliance with onsite retention requirements where it is the only means of achieving compliance (in part or in whole), and where it will not contribute to a condition of pollution or pose a risk in terms of soil or slope stability or other geotechnical condition.

- Installation of Green Roofs/Ecoroofs is Similarly not Optional Where Feasible and Necessary to Meet Onsite Retention Requirements: Green roofs may be a necessary and required practice, where feasible, if other LID practices are not sufficient for achieving onsite retention of the full design storm volume of runoff. Again, merely because a

[1] See Orange County Technical Advisory Group (TAG) for NPDES New Development/Significant Redevelopment Program Presentation, February 9, 2010, at p. 16 ("Feb. 9 TAG Presentation").

practice may require maintenance, or may impose some cost on a development or significant redevelopment project, does not serve to automatically render that practice infeasible. In addition, we note that maintenance requirements of green roofs or ecoroofs are often minimal, and that green roofs or ecoroofs are generally cost-effective in the long term in comparison with conventional roofs, while conferring significant environmental benefits for both individual sites and communities (see discussion below).

- Credits for use of SmartGrowth Practices are Properly Considered Under the Permits' In-Lieu and Waiver Provisions: The TAG has identified use of credits for SmartGrowth practices as a factor to be considered in determining infiltration potential. (*See* Feb. 9 TAG Presentation, at p. 10.) However, any credit for SmartGrowth or other density related development factor is properly considered only *after* a finding of infeasibility for onsite retention has been made for a site. In other words, any credit system should be employed only in determining a site's obligation to address runoff not retained onsite through participation in off-site mitigation or in-lieu programs, not as a means of preemptively reducing the site's onsite retention requirements. (*See, e.g.*, North Orange County MS4 Permit, at XII.E.4). In a similar vein, credits must be based on actual water quality benefits conferred by the SmartGrowth project, not theoretical benefits which may or may not pertain to the project at issue.

- There is no Threshold "Maximum Percentage of Site Area that must be Considered Available for Surface BMPs": NRDC and Coastkeeper do not support the creation of a maximum percentage, or cap, on the site area that must be available for surface BMPs. While we believe the amount of surface area necessary for onsite retention surface BMPs is a highly site specific question, we also are concerned over issues establishing any criteria that could potentially, and perversely, incentivize development to cover areas not "required" to be available for surface BMPs with impervious surface or other hardscape.

The North Orange County Permit Does Not Allow Exemptions from Onsite Retention Requirements for Sites Using Other "Technically Appropriate" BMPs.

NRDC and Coastkeeper again bring to the attention of the TAG that language contained in the North Orange County MS4 Permit, section XII.D.5 does not, as both the January 7, 2009 Geosyntec Draft Memorandum regarding permit interpretation and the Orange County Stormwater Program response to comments on the January 12 TAG meeting claim, grant unbridled authority to sites or the permittees to replace compliance with the permit's onsite retention requirements with use of treatment systems or other "options more technically appropriate for the watershed." (*See* Geosyntec Draft Memo at 2, 4.) As NRDC and Coastkeeper have discussed previously in their January 22, 2009 letter, Section XII.D.5 sets out provisions related to hydromodification, and by its clear language, does not exempt any project from the permit's otherwise applicable LID requirements under section XII.C.

The Response to Comments states that it is "unambiguous in the transcripts of the Board hearings that this section of the Permit is intended to provide flexibility to consider watershed

specific factors in the LID feasibility process." (*See*, Response to Comments from January 12, 2010 TAG Workshop Presentation.) Yet the clear language of the permit, unambiguous on its face, simply does not create any such presumption, and we believe that the resort here to effectively to claims about "legislative history" to interpret clear permit terms is unnecessary, inappropriate, and would set a troubling precedent. Further, at most, and as the Board's Executive Officer stated, any claim that the permit authorizes use of regional approaches, would still be subject to requirements that the approach meet "an equivalent level of capture, harvest re-use, evapotransporation then [sic] what would be achieved on-site."[2] There is nothing in this language to authorize, or even suggest that a site may forego compliance with *retention* requirements through use of other "technically appropriate" practices.

Use of Green Roofs or Ecoroofs

As discussed above, the TAG has given insufficient attention to successful programs in the United States which demonstrate both the cost-effectiveness and proven benefits of green roof or ecoroof technology. For example, a study of ecoroofs in Portland, OR, revealed substantial long term benefits for installing ecoroofs on private and public buildings citywide.[3] Owners of private buildings who installed an ecoroof saw a reduction in private infrastructure and O&M costs as well as reduced energy demand and costs, with an associated increase in roof longevity.[4] Publicly owned buildings with installed ecoroofs saw benefits including "reduced public costs to manage stormwater, avoided public stormwater infrastructure needs and O&M costs, reduced carbon emissions, improved air quality, and increased habitat areas."[5]

Among other benefits, green roofs and ecoroofs provide:

- Runoff Volume Reduction: The City of Portland concluded that use of an "extensive" green roof (consisting of a blanket of low vegetation planted in just a few inches of growing medium) resulted in an annual stormwater volume reduction of 56%.[6]

- Peak Flow Reduction - The Portland study concluded a typical ecoroof would result in a reduction of peak flow by 96%, while studies in Chicago, Vancouver, B.C., Michigan,

[2] California Regional Water Quality Control Board, Santa Ana Region, Transcript of Proceedings, Agenda Item 12, Renewal of Waste Discharge Requirements, County of Orange, Orange County Flood Control District, and Incorporated Cities of Orange County, Urban Storm Water Runoff Management Program, Comments of Gerald Thibeault at 26: 14-16.

[3] City of Portland, Environmental Services, 2008, Cost Benefit Evaluation of Ecoroofs – 2008, (Attachment A). The study was based on a five-story commercial building with a 40,000 square foot roof in downtown Portland. *See also*, City of Los Angeles, Environmental Affairs Department, 2006, Cooling Los Angeles – A green roof resource guide. (Attachment B.)

[4] City of Portland, at 3

[5] *Id.* at 3. A two-year study further concluded that the use of ecoroofs allowed developers to reduce the size of other stormwater management facilities thereby offsetting the cost of the ecoroof by 30% to 60%. *Id.* at 18.

[6] *Id.* See also City of Los Angeles, at II-3, noting that green roofs can capture and evaporate between 10 and 100 percent of precipitation.

New York, and North Carolina have shown green roofs to be efficient in reducing peak flows by an average of between 74% and 85%.[7]

- Energy Conservation: Green roofs provide energy benefits for buildings by reducing building energy demand. The insulating properties of green roofs regulate interior building temperatures, reducing energy demand for heating and cooling. At least one study has estimated that direct savings from mechanisms attributable to green roofs may be as much as a 50 percent savings on air conditioning costs for a building's top story.[8]

- Reduced Urban Heat Island Effect: Green roofs help reduce the urban heat island effect which in-turn further reduces the amount of energy needed to cool buildings, and provide air quality benefits by reducing concentrations of particulate matter and ozone.[9] These results take on added significance given current concerns over global climate change.

- Habitat Creation – Green roofs can provide stepping-stone or island habitats. In urban areas, green roofs can provide elevated ecosystems that offer protection from ground-level predators, traffic noise and other human disturbances.[10]

In addition, and while the cost of green roofs may vary depending on factors including, the type and thickness of selected growth medium, the number and type of plants, whether an irrigation system is required, and whether the roof is new construction or involves retrofit of an existing roof, "the cost of a green roof is roughly comparable to that of a conventional roof when the life of the roof is considered."[11] The adoption and incorporation of proven green/ecoroof technology in Orange County would provide an avenue for a proven, but underutilized method of improving water quality while providing a variety of non-stormwater benefits at a manageable initial cost outlay. Green roofs, properly utilized, should be viewed as an appropriate and "feasible" BMP throughout Orange County, absent an actual finding under the guidelines of the permit that such a proven technology is infeasible for a specific site.

Conclusions

NRDC and Coastkeeper strongly urge the TAG to consider the issues we have identified above into its development of criteria for implementation of MS4 permits for Orange County, in order to both further and protect the course of permit implementation as a cooperative stakeholder process, and to best protect Orange County's water resources. We are concerned about the direction of the process as it stands and believe that all parties should recognize that the implementation process is not an opportunity to make the Permit into something it is not, or

[7] City of Portland, at 16.
[8] City of Los Angeles, at II-5.
[9] *Id*. at II-1 – II-3.
[10] City of Portland, at 24
[11] City of Los Angeles, at III-1.

achieve goals not achieved during the Permit adoption process. It is, instead, simply to faithfully implement the Permit, as written, irrespective of a party's agreement or disagreement with that document as adopted.

Sincerely,

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